

### Patent claims

- 5 1. Procedure for the spatially perceptible representation of a scene/subject, in which several individual picture elements ( $\alpha_{ij}$ ) are made visible simultaneously in a matrix with j lines and i columns, where
  - the  $\alpha_{ij}$  picture elements display partial information from several views ( $A_k$ , where  $k=1 \dots n$ ) of a scene/subject,
  - 10 – a structural plate allows to force the propagation directions of the light radiated from the  $\alpha_{ij}$  picture elements, and for this purpose the structural plate shows several optical elements arranged in series,
  - so that the propagation directions within a viewing area, in which the viewer (s) is (are), cross with several intersections, which correspond in each case to a viewing position,
  - 15 – whereby from each view position a viewer optically perceives with one eye the partial information of a first selection and with the other eye optically perceives the partial information of a second selection from the  $A_k$  views ( $k=1 \dots n$ ), whereby according to the invention,
  - 20 – the average geometrical distance p between two adjacent series of light-transmitting optical elements on the structural plate, fulfills the  $p' \leq p$  condition, on which  $p=G * \sin (0.017^\circ)$ , where G is the quadruple of the diagonal length of the  $\alpha_{ij}$  picture elements matrix.
- 25 2. Procedure following requirement 1, characterized by the fact that the average geometrical distance p' between two adjacent series of light-transmitting optical elements on the structural plate, fulfills the  $p' \leq p'' \leq p$  condition, on which  $p'' = H * \sin (0.017^\circ)$ , where H is two-and-one-half times the diagonal length of the  $\alpha_{ij}$  picture elements matrix.
- 30 3. Procedure following one of the aforementioned requirements, characterized by a structural plate with several cylindrical lenses arranged in a matrix with p columns and q lines which are intended to serve as light-transmitting optical elements.

4. Procedure following either requirements 1 or 2, characterized by a structural plate with a several transparent filter elements arranged in a matrix with  $p$  columns and  $q$  lines respectively, which are intended to serve as light-transmitting optical elements, and these transparent filter elements on the structural plate are respectively located at least partially between essentially opaque filter elements.
5. Procedure following one of the aforementioned requirements, characterized by the fact that the partial information of the first and second selections from the  $A_k$  views ( $k=1 \dots n$ ), is optically perceived by a viewer with one eye and with the other; this exact and precise partial information corresponds to one or several  $A_k$  views ( $k=1 \dots n$ ), whereby the viewer preferably perceives with each eye the corresponding inclusive or exclusive partial information implied in the first and second selections.
6. Procedure following requirement 5, characterized by the fact that the viewing area in which the viewers are located, includes at least that level or those levels, which
  - are oriented in a forwards viewing direction, and
  - are parallel to the  $\alpha_{ij}$  picture elements matrix, and
  - are respectively located at a distance of 2.5 or 4 times the diagonal length of the matrix.
7. Procedure following one of the aforementioned requirements, characterized by the fact that at least one  $\alpha_{ij}$  picture element displays partial information from at least two different  $A_k$  views ( $k=1 \dots n$ ) of the scene/subject mixed partial information.
8. Arrangement for the spatially perceptible representation of a scene/subject, including:
  - an image rendering device with several individual  $\alpha_{ij}$  picture elements in a matrix with  $j$  lines and  $i$  columns, on which the  $\alpha_{ij}$  picture elements reproduce partial information from several  $A_k$  views ( $k=1 \dots n$ ) of the scene/subject.
  - at least one structural plate arranged in the viewing direction before or behind the image rendering mechanism under the requirements of the propagation directions for the light radiated from the  $\alpha_{ij}$  picture elements, whereby the

structural plate shows several optical elements arranged in series for this purpose,

- where the propagation directions within the viewing area in which the viewers are, cross with several intersections, which correspond in each case to a viewing position, so that a viewer optically perceives, for each viewing position, with one eye the partial information of a first selection, and with the other eye the partial information of a second selection from the  $A_k$  views ( $k=1 \dots n$ ), whereby according to the invention,
  - the average geometrical distance  $p$  between two adjacent series of light-transmitting optical elements on the structural plate, fulfills the  $p' \leq p$  condition, on which  $p = G * \sin (0.017^\circ)$ , where  $G$  is four times the diagonal length of the  $\alpha_{ij}$  picture elements matrix.
9. Arrangement following requirement 8, characterized by the fact that the average geometrical distance  $p'$  between two adjacent series of light-transmitting optical elements on the structural plate, fulfills the  $p' \leq p'' \leq p$  condition, on which  $p'' = H * \sin (0.017^\circ)$ , where  $H$  is two-and-one-half times the diagonal length of the  $\alpha_{ij}$  picture elements matrix.
  10. Arrangement following either one of requirements 8 or 9, characterized by a structural plate with several cylindrical lenses arranged in a matrix with  $p$  columns and  $q$  lines, intended to serve as light-transmitting optical elements.
  11. Arrangement following either one of requirements 8 or 9, characterized by a structural plate with several transparent filter elements arranged in  $p$  columns and  $q$  lines, intended to serve as light-transmitting optical elements, where the transparent filter elements on the structural plate are in each case located at least partially between basically opaque filter elements.
  12. Arrangement following one of requirements 8 to 11, characterized by the fact that the partial information of the first and the second selection from the  $A_k$  views ( $k=1 \dots n$ ), which a viewer can optically perceive with one eye with the other eye, correspond respectively to the exact and precise partial information of one or several  $A_k$  views ( $k=1 \dots n$ ), whereby the viewer preferably perceives with each eye exclusively the mentioned partial information for the first and second selections.

13. Arrangement following requirement 12, characterized by the fact that the viewing area in which the viewers are placed includes at least that level or those levels, which
- 5    – are oriented in a forwards viewing direction, and
- are parallel to the  $\alpha_{ij}$  picture elements matrix, and
- are respectively located at a distance of 2.5 or 4 times the diagonal length of the matrix.
- 10   14. Arrangement following one of requirements 8-13, characterized by the fact that at least the reproduced partial information on one  $\alpha_{ij}$  picture element is mixed partial information from at least two different  $A_k$  views ( $k=1 \dots n$ ) of the scene/subject.

15